CLAIMS

What is claimed is:

1. A method comprising:

receiving a demand order including a set of products to be shipped;

simulating a loading of a shipment of the set of products into a set of transports;

evaluating a shipping rule for the shipment, the shipping rule is permitted to be a complex logical statement; and

attempting to fill each transport in the set in simulating the loading of the shipment.

2. The method of claim 1, further comprising:

simulating one of a balanced load and a straight load of the shipment in the transport.

3. The method of claim 1, wherein the complex logical statement is defined by a user.

4. The method of claim 1, further comprising:

upsizing the shipment to fill the transport.

5. The method of claim 1, further comprising:

downsizing the shipment to match a maximum capacity of the transport.

6. The method of claim 1, wherein the shipping rules include at least one constraint including one of a weight constraint, a volume constraint, and a product combination constraint.

7. The method of claim 1, further comprising:

detecting a skipping of a range of a constraint.

8. The method of claim 7, wherein simulating includes incrementing an amount of a first product in the shipment by one shipping unit.

9. The method of claim 8, wherein the shipping unit is a pallet.

10. The method of claim 1, further comprising:
increasing the amount of the set of products in the shipment by a proportionate number of shipping units of each product.

11. The method of claim 1, further comprising:
attempting to fill at least one transport, the at least one transport having multiple destinations.

12. An apparatus comprising:
a means for simulating a loading of a shipment into a transport;
a means for determining if the shipment fills the transport; and
a means for checking if a set of shipping rules are met for the shipment loaded into the transport, the shipping rules including a logical statement.

13. The apparatus of claim 12, further comprising:
a means for simulating one of a balanced load and a straight load of the shipment.

14. The apparatus of claim 12, wherein the logical statement is user defined.

15. The apparatus of claim 12, further comprising:
a means for calculating an increase of a shipment size to include a resource demand for a subsequent time period.

16. The apparatus of claim 12, further comprising:
a means for calculating a decrease in a size of a shipment to match a transport size.

17. The apparatus of claim 12, further comprising:

a means for detecting a skipping of a range of a constraint.

18. A machine readable medium containing therein a set of instructions which when executed cause a machine to perform a set of operations comprising:

receiving a demand order including a set of products to be shipped;

simulating a loading of a shipment of the set of products into a set of transports;

evaluating a shipping rule for the shipment, wherein the shipping rule is permitted to be a complex logical statement; and

attempting to fill each transport in the set in simulating the loading of the shipment.

19. The machine readable medium of claim 18, having further instructions stored therein, which when executed cause a machine to perform a set of operations, further comprising:

simulating one of a balanced load and straight load of the shipment in the transport.

20. The machine readable medium of claim 18, having further instructions stored therein, which when executed cause a machine to perform a set of operations, further comprising:

receiving a user defined shipping rule.

21. The machine readable medium of claim 18, having further instructions stored therein, which when executed cause a machine to perform a set of operations, further comprising:

increasing a size of the shipment to fill the transport.

22. The machine readable medium of claim 18, having further instructions stored therein, which when executed cause a machine to perform a set of operations, further comprising:

decreasing a size of the shipment to match the maximum capacity of the transport.

23. The machine readable medium of claim 18, wherein the shipping rules include at least one constraint including one of a weight constraint, a volume constraint, and a product combination constraint.

24. The machine readable medium of claim 18, having further instructions stored therein, which when executed cause a machine to perform a set of operations, further comprising:

detecting a skipping of a range of a constraint.

25. The machine readable medium of claim 18, wherein simulating includes incrementing an amount of the set of products in the shipment by one shipping unit.

26. The machine readable medium of claim 25, wherein the shipping unit is a pallet.

27. The machine readable medium of claim 25, having further instructions stored therein, which when executed cause a machine to perform a set of operations further comprising:

increasing the amount of the set of products in the shipment by a proportional number of shipping units of each product.

28. The machine readable medium of claim 18, having further instructions stored therein, which when executed cause a machine to perform a set of operations further comprising:

attempting to fill a second transport, the second transport having multiple destinations.

29. An apparatus comprising:

a set of demand order modules including a set of products to be shipped in a set of transports;

a set of shipping rule modules permitted to include a complex logical statement;

a loading module to simulate the loading of a shipment of the set of products into the set of transports; and

a processing device to evaluate the complex logical statement in a shipping rule module and to execute the loading module to simulate loading a shipment of the set of products to be shipped and to attempt to fill each transport in the set of transports.

30. The apparatus of claim 29, further comprising:

a storage device to store at least one of the set of demand order modules, the set of shipping rule modules, and the loading module.

31. The apparatus of claim 29, further comprising:

a skip detection module to detect the skipping of a constraint.

32 The apparatus of claim 29, further comprising:

an upsizing module to increase a size of a the shipment to fill the transport.

33. The apparatus of claim 29, further comprising:

a downsizing module to decrease the size of a shipment to match the maximum capacity of the transport.